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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,495	09/28/2001	Richard K. McMillan	10541/281	5288

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EXAMINER

LEE, GUIYOUNG

ART UNIT PAPER NUMBER

2875

DATE MAILED: 12/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/966,495

Applicant(s)

MCMILLAN ET AL.

Examiner

Guiyoung Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 0103. 6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 10-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 10 recites the limitation "said aluminum layer" in line 9. There is insufficient antecedent basis for this limitation in the claim.
4. Claim 11 recites the limitation "said aluminum layer" in line 2. There is insufficient antecedent basis for this limitation in the claim.
5. Claim 12 recites the limitation "the middle layer" in line 2. There is insufficient antecedent basis for this limitation in the claim.
6. Claim 13 recites the limitation "the said middle layer" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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6. Claims 7 is rejected under 35 U.S.C. 102(e) as being anticipated by Roberts et al. (USPT 6,441,943 B1).

7. Re claim 7: Robert discloses a method forming a reflective aperture in a circuit board for providing illumination in automotive applications, comprising the step of: providing a layered metal substrate (2001 in Fig. 20); removing at least a top layer (2002, 2004, and 2006 in fig. 20) of the layered metal substrate to form a reflective area (col. 24, lines 1-5); providing a localized light source (2013 in Fig. 20) positioned so as to allow light to reflect off of the reflective area.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-6, 8-9, 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts et al. in view of Kamada et al. (USPT 6,331,063 B1). The teachings of Roberts have been discussed above.

10. Re claims 1, 3, and 14: Roberts discloses an illuminating and reflecting apparatus having a layered metal substrate (2001 in Fig. 20 and col. 24, line 1), at least one exposed area of the metal layer (223 in Fig. 20), and a localized light source positioned to provide illumination (2013 in Fig. 20). Robert does not disclose that the layered metal substrate comprised of a layer of aluminum positioned between two layers of copper. However, Kamada teaches a LED luminaire having a layer of aluminum (10 in Fig. 1 and col. 3, line 54) positioned between tow layers of copper (12 in Fig.1). It would have been obvious to one having ordinary skill in the art at the

time the invention was made to substitute Roberts' layered metal substrate with aluminum and copper layers as suggested by Kamada because Kamada's aluminum and copper layers are electrically conductive layers. Further, Roberts discloses a method for constructing the apparatus such as an etching process (col. 24, line 2).

11. Re claims 2,4, 6, 8-9, 15, and 17: Kamada teaches a non-planar reflective surface and a layer of coating on the non-planar reflective surface (11 a in Fig. 1 and col. 4, lines 32-35).

12. Re claims 5 and 20: Roberts discloses a transparent substrate (2008 in Fig. 20).

13. Re claim 16: Roberts discloses an aperture defined through all of the layers of the substrate (223 in Fig. 20).

14. Re claims 18-19: Roberts discloses that the localized light source (2013 in Fig. 20) is substantially aligned with the aperture (223) and a layer of reflective substrate (2001) over the aperture opposite said localized light source.

15. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts in view of Mueller-Fiedler et al. (USPT 6,362,083 B1). The teachings of Roberts have been discussed above.

16. Re claims 10-13: Roberts discloses a method for forming a reflective aperture in a circuit board for providing illumination in automotive application such as an etching process as discussed above. Although Roberts discloses the etching process, he does not disclose an etching process using masking material. However, Mueller-Fiedler discloses an etching process using masking material (col. 3, lines 53-55). It would have been obvious to one having ordinary skill in the art at the time of the invention to employ masking material in order to remove metal layer as

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suggested by Mueller-Fiedler because masking provides an efficient and accurate means to limit etching to a particular area.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Guiyoung Lee** whose telephone number is (703) 308-8567. The examiner can normally be reached between the hours of 8:00 AM to 3:30PM Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea, can be reached on (703) 305-4939. The fax phone number for this Group is (703) 872-9306. The Right Fax phone number for the examiner is (703) 746-4766.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [**Guiyoung.lee@uspto.gov**].


All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

GYL

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November/21/2003


Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800